WE ARE CYBER

Center for Forensics, Information Technology, and Security (CFITS) Newsletter

UNIVERSITY OF SOUTH ALABAMA
SCHOOL OF COMPUTING

CENTER FOR FORENSICS, INFORMATION TECHNOLOGY, AND SECURITY

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CFITS Cybersecurity Colloquium

February 15, 2023, 2:30 pm

Shelby Hall, Room 2121

Diana Allen, PhD

President and CEO, The SSI Group, LLC

Diana Allen is a healthcare finance leader with more than 25 years' experience in healthcare revenue cycle management. Serving as The SSI Group's President and CEO, she is focused on augmenting the company's service and solutions, drawing on her experience in business development, quality improvement, and strategic direction. Prior to joining SSI, Diana honed her revenue cycle skills with companies such as GE Healthcare, McKesson Corporation, Meridian and Harvard Medical Faculty Physicians. Diana holds a doctorate degree from Colorado Technical University in Healthcare Administration and a master's degree in Healthcare Administration from Cambridge College.

NATIONAL CENTER OF ACADEMIC EXCELLENCE IN CYBER DEFENSE (CAE-CD)

Director's Message



Man's Flight Through Life Is Sustained By The Power Of His Knowledge.

-Inscribed on the
Eagle and Fledglings Statue,
United States Air Force
Academy (USAFA)

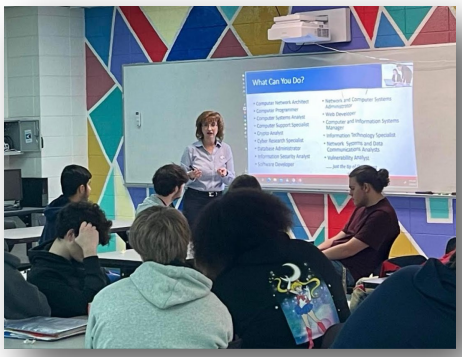
In 2023, CFITS is positioned to increase the opportunities for our faculty and students to experience and participate in workforce development and outreach activities with our educational, industry, and DoD partners, as well as provide solutions to many real-world problems in the cybersecurity, IT, and forensics space. Our CFITS managed internship teams continue to provide an opportunity for partners to have a cost-effective option for product and service development, and our traditional internship options offer an alternative approach for recruiting and training our students for future jobs. Our workforce development initiatives this year include promoting more females to be part of the cybersecurity career path with Women In Cybersecurity (WiCyS) and also sponsorship of our students who participate routinely in cyber defense competitions and capture the flag events as part of USA's DayZero student organization. Our K-12 outreach this year will involve bringing more of our existing partner schools back onto campus for Hands On Learning Lab (HOLLA) field trips as well as broadening our reach to Baldwin county schools and others outside the Mobile region through virtual interactions or targeted computing camps. We plan to grow lab capacity for highly specialized and technical skills this year to support software and hardware assurance activities, and will be announcing and promoting new opportunities for students, post-doctoral researchers, and research scientists to participate in fellowships and job opportunities. 2023 is already off to a running start and I look forward to the opportunities ahead.

USA Joins USCYBERCOM Academic Engagement Network

In Fall of 2022, the University of South Alabama became part of US Cyber Command's network of collaborative universities and schools that is designed to broaden the partnership between the Department of Defense and academia. US Cyber Command is tasked with defending the DoD information network, supporting combatant commanders that execute cyber missions worldwide, and respond to cyber attacks. USCYBERCOM not only directs cyberspace operations and strengthens DoD cyberspace capabilities, it helps integrate and bolster cyber expertise to support its ongoing missions. The academic engagement network will help recruit a more highly qualified and diverse pool of future cyber professionals for military and civilian work roles within the command and increase the adoption of cutting-edge research that will provide cyber solutions and innovation opportunities. Exchanges and directed research will be used to foster unique competencies, capacities, and expertise that provide insight into adversarial cyberspace activities. The network aligns perfectly with the CFITS mission within the School of Computing to match cyber research competencies with potential partners and increase training and knowledge for our faculty and students.

USA Visits Pascagoula College and Career Technical Institute

In January, the School of Computing visited the Pascagoula Gautier School District and its College and Career Technical Institute (CCTI). CCTI helps prepare students for careers right out of high school, two years of community college or four years of college or more through its Career Technical Education program. Ms. Angela Clark (Chair of IST Department), Dr. Todd McDonald (CFITS Director), and Ms. Kellie Ballard (SoC Recruiter) visited with and gave presentations to the Project Lead The Way (PLTW) Computer Science students at CCTI to help cast a vision for degree options at USA and student opportunities for those interested in computing. CCTI helps point students toward opportunities in cybersecurity, engineering, computing, and forensics while helping prepare them for the Computer Science AP exam. USA offers a natural pathway for students from Pascagoula and Gautier to explore degree options in Computer Science, Information Technology, Information Systems, and Health Informatics, while also providing a vibrant campus life with ample opportunities for scholarships, student activities, internships, follow-on job skills, and undergraduate research. The USA team also covered unique opportunities within SoC for cybersecurity skills and education through our NSF Scholarship for Service program and curriculum that is certified as part of the NSA and Dept of Homeland Security's Center for Academic Excellence (CAE) program.



CFITS Collaboration with Redstone Arsenal

Redstone Arsenal in Huntsville is home to several key organizations that support the Army mission of defending the homeland and providing prompt and sustained land combat. The U.S. Army Combat Capabilities Development Command (DEVCOM) Aviation and Missile Center (AvMC) for example is headquartered at Redstone and home to over 12,000 innovators, researchers, and world-class scientists and engineers. They drive the work that will realize new capabilities for the Army of 2030 and beyond. Likewise, the U.S. Army Space and Missile Defense Command (SMDC) headquartered at Redstone develops and provides current and future global space, missile defense, and high altitude capabilities to the Army, joint forces, and its allied partners. They help prepare for future conflict as well as conduct integrated planning and synchronization operations to execute missions involve space missile defense. Both AvMC and SMDC help protect our nation through deterrence, assurance, and leading-edge technology. They also must recruit and develop the engineering and computing talent to support their missions. CFITS and USA have developed partnerships within both commands as well as their supporting contractor organizations in the last few years, and many opportunities are around the corner for our faculty and students to increase our workforce development pipeline with the arsenal. Recently, CFITS Director (Dr. Todd McDonald) and two professors from SoC (Dr. Jordan Shropshire and Dr. Aviv Segev, seen L to R in picture) met with top leadership and cyber strategists from AvMC and SMDC to discuss the uniqueness of USA in terms of technology, student potential, and research areas of interest. These collaborations will soon open up new opportunities for SoC students and faculty to provide training, skills development, and realized applications for software and hardware assurance as well as cyber resilience that will contribute to the Army mission in the years to come.



SoC Alumni Mixer in Huntsville

CFITS Director (Dr. Todd McDonald) recently hosted a USA School of Computing mixer in Huntsville for our SoC alumni. Currently there are over 50 SoC graduates in the Huntsville area who have found career opportunities in the many companies and government agencies that are in this technological hub of Alabama. Several graduates from the area visited with Dr. McDonald at Straight To Ale which is part of the Campus 805 venue in Huntsville. It was great to hear what our former students are doing now as they are working for major companies which include Boeing, Raytheon, Deloitte, COLSA, DESE Research, Dynetics, and Amazon just to name a few. Many of our graduates who were part of USA's CyberScholars program that provides NSF Scholarship for Service opportunities, have also found follow-on jobs within the US Army's Development Command Aviation and Missile Center (AvMC).






DayZero Students Build Skills at DOE Cyberforce and Collegiate Pen Testing Competitions

In November of 2022, several SoC students who are part of USA's DayZero student organization participated on teams for two major cybersecurity competitions. The Department of Energy (DOE) Cyberforce competition was held at the Q Center in Chicago, IL and hosted over 143 universities nationwide with most on-site and some virtually participating. Cyberforce capitalizes on the expertise of current DoE laboratory staff to provide an interactive, scenario-based event where students engage in cybersecurity activities focused on protecting on critical infrastructure protection inspired from energy-sector companies. Overall, our USA team placed 40th out of 143, which was a very encouraging finish to be in the top third of teams nationally. Students also role-played a real-world penetrating testing firm that uses ethical hacking skills to assess organizational cyber defense posture in the Global Collegiate Penetration Testing Competition, where the regional event was held at the Georgia Cyber Center in Augusta, GA. The 2022 scenario focused on the Hotel and Hospitality industry with a typical hotel operating a user rewards program, booking and reservation system, and security monitoring suite. The team finished in the top half of the 10 teams in the region and it was the first time many students had ever been exposed to professional pen-testing. Both competitions are examples of how the security community is attempting to increase cybersecurity skills for its future workforce and develop interest to fill the over 500K unfilled cybersecurity positions in the public and private sector.

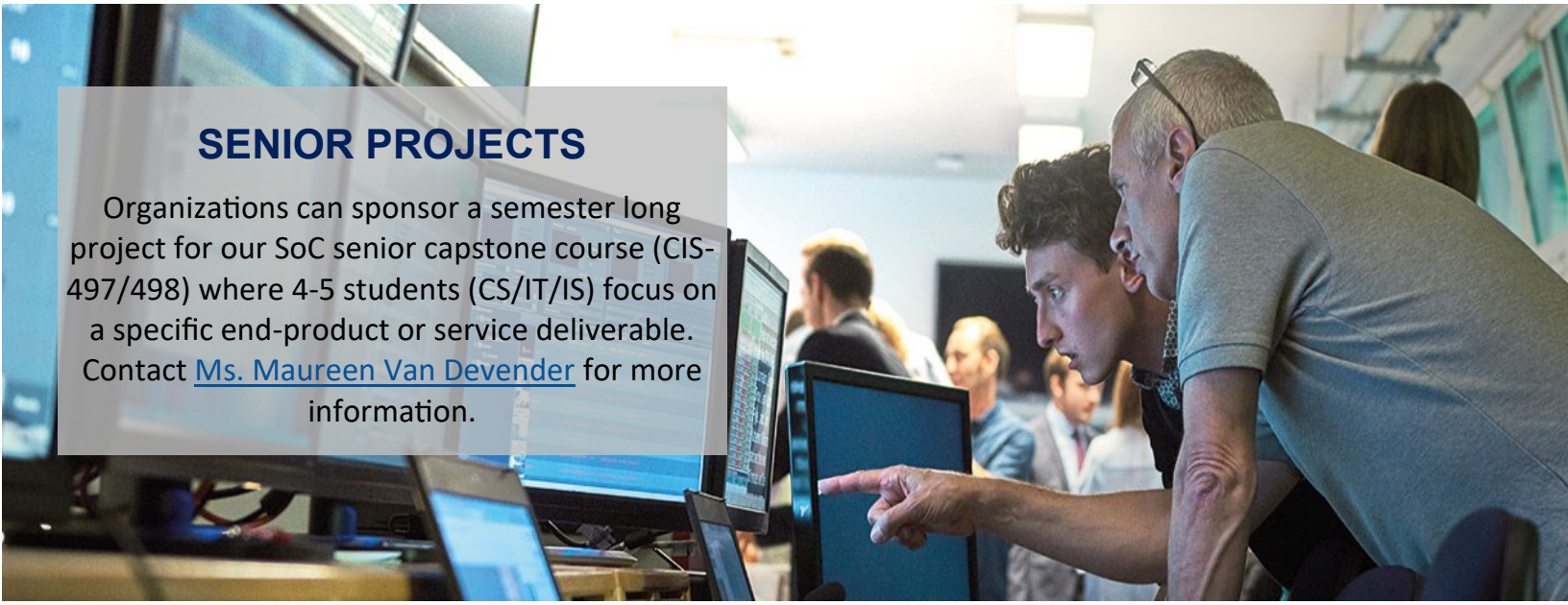
CyberForce Team (L to R): Dr. McDonald, Zach Van Welzen, Ethan Blum, Matt Van Welzen, Rebecca Clark, Destin Hinkel, Sam Smith





CPTC Team (L to R): Dr. McDonald, Rebecca Clark, Ethan Blum, Sam Smith, Zach Van Welzen, Chad Callegari, Jamie Carambat

Partnership and Engagement Opportunities



SENIOR PROJECTS

Organizations can sponsor a semester long project for our SoC senior capstone course (CIS-497/498) where 4-5 students (CS/IT/IS) focus on a specific end-product or service deliverable. Contact Ms. Maureen Van Devender for more information.



INTERNSHIP PROGRAMS

For industry partners looking for traditional internships where students work on-site during the school year or summer, or for development-based teams of 4-5 students that can meet short-term project demands under the leadership of an SoC faculty member. Contact Dr. McDonald for more information.



K-12 STEM OUTREACH

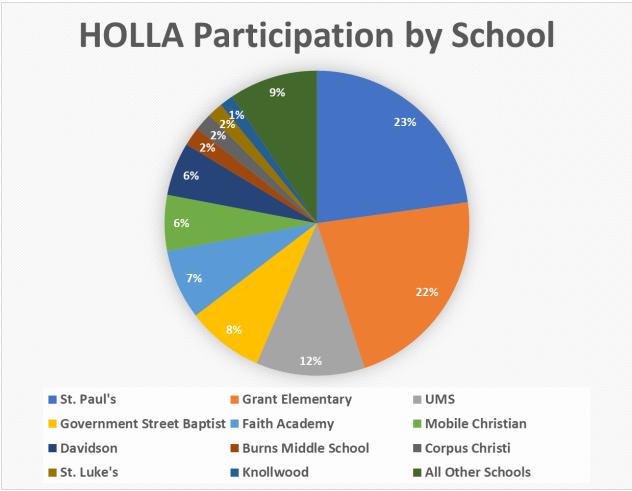
Schools can arrange for Hands on Learning Activity (HOLLA) field trips to the USA campus where 30-60 students can learn topic-based, instructor-guided content. For more information see the HOLLA information page. Available topics are posted on the K-12 Resource Repository page.

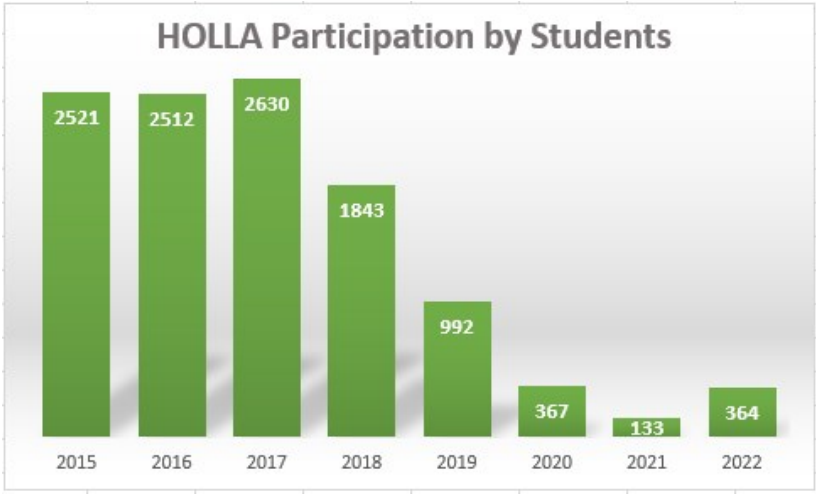
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Field Trip Outreach Activity

Hands On Learning Lab Activity (HOLLA) field trips are one of the best ways for our partner K-12 schools to get students of all grade levels onto the South campus and experience the facilities offered by Shelby Hall with hands-on instruction for students in a wide-variety of computing topic areas. The HOLLAs have been wildly successful over the years in bringing over 11,300 students to Shelby Hall since 2015 and engendering the love of all things cyber to students from almost 30 different schools in the region. Right before COVID and during, participation rates fell sharply as expected, with a steady rise since the campus has been fully opened back. With more than 2500 students per year being on campus with us in the 2015-2017 years, CFITS is looking to increase our HOLLA activities back to these standard numbers from years ago. To date, some of the most popular topics still include the Brain Computer Interface, Creating a Basic Web Page, OO Programming Using Scratch and ALICE, and Project Management.







Spread the Word

USA Spring 2023 Hire A Jag Career Fair: February 7

SoC Open House: February 10

ASMS Computing Camp @ SoC: February 13-17

SoC Advisory Board Meeting: February 28

USA Spring Graduate Research Forum: March 15

SoC Spring Celebration: April 14

USA Day: April 22

The Center for Forensics, Information Technology and Security is designed to promote the advancement of knowledge related to the study and application of digital forensics, information technology, security and assurance. CFITS is supported by the University of South Alabama and the School of Computing to further the educational, research, and community engagement goals of both.